

## A New Species of the Labrid Fish Genus *Macropharyngodon* from Southern Japan

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**Abstract** A new labrid fish, *Macropharyngodon moyeri*, is described from the Izu Islands, Japan. The new species differs from *M. kuiteri* Randall principally in coloration, and from all other known species of the genus in its atypical dentition and greater number of dorsal and anal fin rays.

Recent collections of fishes at Miyakejima (34°05'N, 139°30'E), Izu Islands, yielded specimens representing more than sixty species of the family Labridae. Among these were four specimens of a new species of *Macropharyngodon*, which is described below. In the description, data for the paratypes differing from those of the holotype are given in parentheses. The length of the caudal peduncle was measured from the base of the last anal ray to the mid-base of the caudal fin. Gill raker counts include all rudiments. Pectoral fin counts include the upper rudimentary ray.

Type specimens of the new species are deposited in the National Science Museum, Tokyo (NSMT-P), the California Academy of Sciences, San Francisco (CAS), the Bernice P. Bishop Museum, Honolulu (BPBM), and the Tatsuo Tanaka Memorial Biological Station, Miyakejima (TMBS).

### *Macropharyngodon moyeri*, sp. nov.

New Japanese name: Usuba-nodogurobera  
(Fig. 1)

**Holotype:** NSMT-P 18352, 51.5 mm SL, female, Izu Islands, Miyakejima, Igaya Bay, sand bottom with intermittent algae in 17 m, screen net and Quinaldine, K. A. Meyer, 4 October 1976.

**Paratypes:** CAS 38089, 43.5 mm SL, same locality as holotype, rock rubble with heavy growth of algae (*Padina*) in 6 m, Quinaldine, J. W. Shepard, 26 July 1976; BPBM 20329, 84.0 mm SL, male, same locality as holotype, sand bottom with intermittent algae (*Codium*) in 15 m, screen net and Quinaldine, J. T. Moyer and K. A. Meyer, 27 July 1976; TMBS 760926-7, 55.0 mm SL, female, same locality as holotype,

algae-covered rock rubble on sand in 11 m, screen net and Quinaldine, K. A. Meyer, 26 September 1976.

**Diagnosis.** A species of *Macropharyngodon* with the following combination of characters: Dorsal fin rays IX, 12; anal fin rays III, 12; pectoral fin rays ii, 10; teeth in outer row of upper and lower jaw (except posterior canine) flattened or laterally compressed, not conical; scales on lateral line usually with three pores on exposed portion; black spot on opercular flap oblong, notably smaller than eye, not rimmed in blue; scales on nape and body side with a vertical orange streak; body and fins without pale blue spots.

**Description.** Dorsal fin rays IX, 12; anal fin rays III, 12; pectoral fin rays ii, 10; pelvic fin rays I, 5; branched caudal fin rays 12; pored lateral-line scales 27 plus one beyond hypural plate; gill rakers 19 (17~18).

Body moderately deep and compressed, the greatest depth 2.86 (2.97~3.06) in standard length (SL), the width 2.25 (2.06~2.22) in depth. Head bluntly rounded in profile, 2.91 (2.88~3.03) in SL. Snout 3.28 (2.92~3.28), diameter of orbit 4.54 (4.31~5.33) in head. Caudal peduncle short and deep, the least depth 2.02 (1.91~2.11), the length 2.76 (2.84~2.96) in head. Caudal fin slightly rounded, 1.44 (1.34~1.46) in head. Pelvic fins pointed behind, reaching anus in large individuals, 2.01 (1.65~2.01) in head. Pectoral fins 1.55 (1.54) in head. Dorsal spines gradually increasing in length posteriorly, the first 5.90 (5.81~6.33), the ninth 3.40 (3.35~3.46) in head; soft portion of dorsal slightly elevated, pointed behind; penultimate ray longest, 2.36 (2.08~2.52) in head. First anal spine 9.83

(10.07~11.54), the third 4.12 (4.08~4.69) in head; anal fin pointed behind, the penultimate ray longest, 2.36 (2.13~2.56) in head. These and other proportional measurements are recorded in thousandths of standard length in Table 1.

Teeth on jaws biserial, a partially embedded inner row of three (1~4) blunt, anteriorly-inclined teeth buttressing outer row on side of jaws near front of mouth. Upper jaw with two pairs of enlarged, flattened teeth anteriorly, followed on each side by five (3~5) progressively smaller, laterally compressed, subtruncate teeth; a large conical canine curving forward from near corner of mouth. Teeth on lower jaw similar, but anteriormost pair closely associated, forming a point at symphysis of jaw (median teeth longest on symphyseal side); seven (6~8) small teeth following enlarged anterior pairs on side of jaw. Lower pharyngeal bone (dissected from 84 mm SL male paratype) with central molar flanked by three small teeth to each side and two small teeth to the front; anterior shank of bone with a single row of eight small conical teeth. Upper pharyngeals with a cluster of

small conical teeth anteriorly followed by a row of three larger molariform teeth.

Head naked except for a triangular patch of scales on side of nape, the apex of patch just reaching a vertical at hind edge of preopercle; midline predorsal scales absent. Scales on abdomen and thorax smaller than those on body side, enclosing a naked region on breast between isthmus and pelvic fin insertion. Lateral-line scales each with three (rarely one, two or four) pores on exposed portion (Table 2). Fins naked except caudal, where several rows of progressively smaller scales extend onto base of fin.

Posterior nostril with a dermal flap on anterior edge (flap about equal to nostril opening in size), about equidistant from anterior nostril and eye; anterior nostril in a short tube. Hind edge of preopercle free, entire, about 2.5 times longer than lower free edge. Inner surface of upper lip plicate laterally; lower lip with a free flap on each side.

Color of holotype (51.5 mm SL female; NSMT-P 18352) in formalin: Body light brownish; each scale with a pale vertical streak, the streaks

Table 1. Morphometric proportions of type specimens of *Macropharyngodon moyeri* expressed in thousandths of standard length.

Character	Holotype	Paratypes		
	NSMT-P 18352	BPBM 20329	TMBS 760926-7	CAS 38089
Standard length (mm)	51.5	84.0	55.0	43.5
Greatest body depth	349	337	336	326
Greatest body width	155	155	158	147
Length of head	344	330	345	347
Length of snout	105	113	109	106
Interorbital width	91	88	96	93
Eye diameter	76	62	73	80
Snout to dorsal fin origin	295	294	298	299
Snout to anal fin origin	524	520	536	523
Length of dorsal fin base	678	706	669	671
Length of anal fin base	427	440	420	437
Length of pectoral fin	227	234	234	239
Length of pelvic fin	171	200	180	172
Least depth of caudal peduncle	170	173	164	168
Length of caudal peduncle	124	116	118	117
Length of first dorsal spine	58	56	55	60
Length of ninth dorsal spine	101	95	102	103
Length of longest dorsal ray	146	158	142	138
Length of first anal spine	35	29	32	34
Length of third anal spine	83	70	76	85
Length of longest anal ray	146	155	142	136
Length of caudal fin	239	238	236	260

A



B



C



Fig. 1. Type specimens of *Macropharyngodon moyeri* from Miyakejima, Izu Islands, Japan: A) BPBM 20329, male, 84.0 mm SL; B) holotype, NSMT-P 18352, female, 51.5 mm SL; C) CAS 38089, juvenile, 43.5 mm SL. Photographs of freshly preserved specimens.

less distinct toward abdomen where markings are absent. Head dusky above with pale undulate spots and bands, abruptly paler below level at lower edge of eye; tip of opercular flap with a deep blackish oblong spot; a dusky blotch anteriorly on the upper lip; a blackish blotch on the lower lip and chin which narrows posteriorly, then widens to become a mid-ventral longitudinal streak on the gill membranes. Dorsal fin pale with a blackish spot on anteriormost interspinous membrane, another spot near base of fin between tenth and eleventh soft rays; a dark submarginal line running the length of fin posterior to sixth spine. Anal fin pale, the distal third dusky, a dark submarginal line running the entire length of fin. Pectoral, caudal and pelvic fins uniformly pale.

The 84 mm SL male paratype (BPBM 20329) differs from the holotype chiefly in the absence of the blackish spot posteriorly on the dorsal fin and in the enlargement of the anterior dorsal spot, which extends onto the second interspinous membrane of the fin. In addition, the blackish streak on the chin and isthmus is darker and the pale spots and bands on the head (orange-red in life) are more clearly defined.

The smallest paratype, a 43.5 mm SL juvenile (CAS 38089), is similar to larger females but has four broad pale transverse zones on the body side, the first beneath the pectoral fin and the last just anterior to the caudal peduncle. The blackish spot anteriorly on the dorsal fin is faint; two additional black spots are present on the anal fin, one on the first soft ray and another between the tenth and eleventh soft rays.

Color of holotype in life: Body dusky orange-brown with a greenish tinge (especially mid-laterally), each scale with a reddish orange verti-

cal streak (streaks absent on breast and abdomen, which are pink with a lavender wash). A reddish orange patch larger than eye on side beneath pectoral fin bordered anteriorly by a greenish zone along inner fin base. Snout, lips and head below level of eye greenish yellow (opercle shading to pinkish toward breast and isthmus), a salmon pink bar below eye and a similarly-colored blotch across hind edge of preopercle. Lips each with a faint bluish black spot anteriorly, the upper extending onto snout, the lower onto chin and isthmus. Upper part of head dusky brown with poorly defined reddish orange spots and bars mainly in postocular region (though present above and to the front of eye); opercular flap green, a deep black oblong spot on tip, the green bordered anteriorly by a red-orange band from lateral-line origin to upper pectoral base. Pupil of eye rimmed in reddish orange; iris deep blue-green, rimmed in reddish orange. Dorsal fin dull orange washed with green, the green predominating toward base of fin where orange pigmentation is restricted to faint reticulations which are most clearly defined posteriorly; a small black spot on first interspinous membrane and another between tenth and eleventh soft rays. Anal fin dusky orange-brown, faintly spotted with green along base; a dull green band, edged in violet, medially from origin of fin to ninth soft ray. Dorsal and anal fins with a dark submarginal line, edged with pale blue distally. Caudal fin pale blue, orangish medially, a greenish wash across base; rays orangish basally, pale distally. Pelvic fins clear, a broad creamy streak along front edge. Pectoral fins clear, a greenish yellow band across base.

Color of 84 mm SL male paratype in life: Body orangish brown with a greenish wash mid-

Table 2. Lateral-line scale pore counts for type specimens of *Macropharyngodon moyeri*.  
\*, holotype.

Specimen	Pores per scale							
	Anterior section				Descending and peduncular sections			
	1	2	3	4	1	2	3	4
SL: 84.0 mm	1	3	30	6	0	1	5	4
55.0	5	5	28	2	3	7	2	0
51.5*	0	3	36	1	0	1	11	2
43.5	1	2	36	1	2	5	7	0
Total	7	13	130	10	5	14	25	6

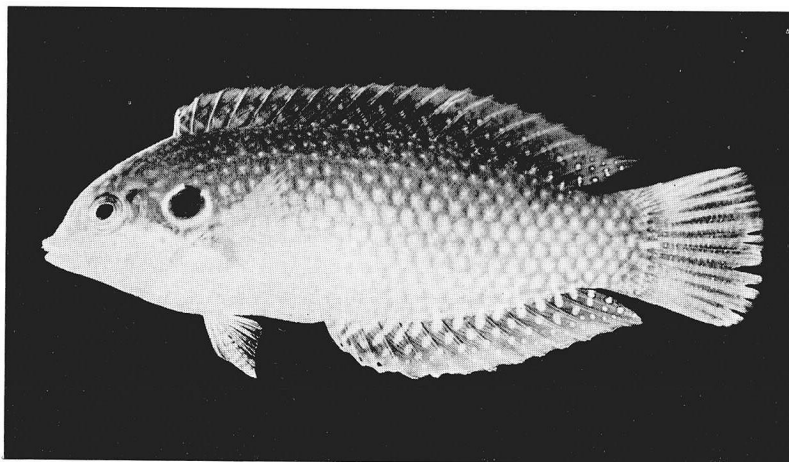


Fig. 2. *Macropharyngodon kuiteri* Randall. Photograph of a 63 mm SL individual in the primary color phase from Seal Rocks, New South Wales, Australia. J. E. Randall photo.

laterally, a vertical red-orange streak on each scale (streaks less distinct toward abdomen where salmon pink predominates). Upper portion of head dusky brown with variform orange-red spots and bands, the lowest curving from lower edge of eye across opercle and pectoral base to fade on abdomen. A broad dusky brown zone mid-dorsally from snout to dorsal origin. Opercular flap green, a black spot smaller than eye on tip, the green bordered anteriorly by an orange-red band passing from near upper edge of gill-opening, behind pectoral axil, thence fading on abdomen. Lips yellowish, the upper with a small bluish black spot anteriorly, the lower with a blotch of similar color extending onto chin and isthmus. Head below level at lower edge of eye sulfur yellow with two pale salmon pink markings, the first a short bar across hind edge of preopercle, the second a band originating near angle of preopercle, running toward mouth, thence deflected down and back to follow edge of opercle to level of upper pectoral base. Pupil of eye rimmed in reddish orange, the iris bluish green. Dorsal fin dull orangish with a pale green median band, the basal orange portion densely interspersed with green; two anterior-most interspinous membranes with a deep black blotch bordered below by green and above by orange-red. Anal fin dusky orange with a median longitudinal green-yellow band. Dorsal and anal fins with a deep blue submarginal line, edged distally with pale blue. Caudal fin rays orangish; membrane of fin pale blue medially, shading to greenish yellow near upper and lower

margins of fin. Pelvic fins clear with a creamy streak along first soft ray. Pectoral fins clear, a sulfur yellow bar across base.

Color in life of 43.5 mm SL juvenile as shown in Fig. 1.

**Remarks.** In his recent review of *Macropharyngodon*, Randall (in press) recognized nine species of the genus, five of which were described by him as new. *M. moyeri* differs from the majority of these (*M. geoffroy* (Quoy et Gaimard), *M. meleagris* (Bleeker), *M. negrosensis* Herre, *M. bipartitus* Smith, *M. choati* Randall, *M. vivienae* Randall, *M. cyanoguttatus* Randall, and *M. ornatus* Randall) in having twelve soft rays in both the dorsal and anal fins, and in the flattened condition of the teeth in the outer row of both jaws. The aforementioned species have eleven soft dorsal and anal rays and conical dentition (Randall, in press).

The new species appears to be most closely related to *M. kuiteri* Randall, with which it shares a common number of fin rays and similar dentition. The two species differ principally in coloration. The blue-spotted primary phase of *M. kuiteri* is easily distinguished from the primary phase of *M. moyeri* by the large blue-rimmed black spot on the opercle. The corresponding spot of the new species is proportionally smaller and lacks a prominent rim.

Another apparent difference between the two species lies in the number of pores on the lateral-line scales. Randall's description indicates a lower overall number of pores (usually two on each scale of the anterior section of the line,

and one on each scale of the descending and peduncular sections) for *M. kuiteri* than is found in the type specimens of *M. moyeri*. In the new species, scales with three pores predominate (Table 2). However, final judgement on the significance of this difference must await the examination of additional specimens of both species.

A photograph sent by Randall of *M. kuiteri* in the primary phase is here reproduced as Fig. 2. *M. kuiteri* is presently known only from New Caledonia and Eastern Australia south to Sydney.

*Macropharyngodon moyeri* was not common at any of the collection sites, but frequent sightings of the species indicate that it is an established member of the island's ichthyofauna. The authors have seen a photograph of what they believe to be this species from the Ryukyu Islands, but at this time are unable to confirm the presence of the species at that locality.

The new species is named in honor of Jack T. Moyer, Director of the Tatsuo Tanaka Memorial Biological Station, who offered extensive support to the authors during their research at Miyakejima.

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#### 南日本から得られた1新種ウスバノドクロベラの記載

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伊豆諸島の三宅島から得られたベラ科の1新種ウスバノドクロベラ *Macropharyngodon moyeri* を記載した。本種は *M. kuiteri* 以外の同属の既知種とは、歯が扁平であることと、背鰭と臀鰭の条数が12本と、いずれも1本多いことで識別できる。*M. kuiteri* とは色彩および各側線鱗の各部開孔数で区別される。

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